

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001482

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁷ : C07K 2/00, 7/00, 7/04, 7/06, 7/08, 14/71, 14/715; A61K 38/19, 38/20; A61P 35/00, 43/00 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) STN File CA, WPIDS, MEDLINE, BIOSIS; Keywords: GM-CSF, il-3, il-5, tyr, tyrosine, tyr577, ser, serine, ser585, thr, threonine, motif, bind		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1996/021000 A2 (SMITHKLINE BEECHAM PLC) 11 July 1996 See pages 4-5 and Figure 7	1, 4
X	US 5112961 A (HAYASHIDA) 12 May 1992 See column 2 paragraph 4- column 3 paragraph 5, column 6 line 65- column 7 line 18, Example IV and claims 3-4	1-11, 13-27
X	Palacios, C et al "The JNK phosphatase M3/6 is inhibited by protein-damaging stress", Current Biology, 2001, vol 11 pages 1439-1443 See abstract	1, 2, 28, 31
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
Date of the actual completion of the international search 17 January 2005		Date of mailing of the international search report 1 FEB 2005
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer CHRISTINE BREMERS Telephone No : (02) 6283 2313

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Stomski, F. C et al "Identification of a 14-3-3 binding sequence in the common β chain of the granulocyte-macrophage colony-stimulating factor (GM-CSF), interleukin-3 (IL-3), and IL-5 receptors that is serine-phosphorylated by GM-CSF", Blood, 1999, vol 94 no 6 pages 1933-1942 See page 1939: discussion paragraph 1 & AU 200074992 22 March 2001	1-79
X	DATABASE NCBI (protein) Accession Number P48357, Leptin receptor Sequence data	1-11, 13-27
X	DATABASE NCBI (protein) Accession Number P40189, Interleukin-6 receptor Sequence data	1-11, 13-27
X	DATABASE NCBI (protein) Accession Number AAA18171, 16 May 1994 GM-CSF receptor beta chain Sequence data	1-27
X	Lewis, R. E. et al, "Phorbol ester stimulates phosphorylation on serine 1327 of the human insulin receptor", The Journal of Biological Chemistry, 1994, vol 269 no 42 pages 26259-26266 See page 26260 first paragraph, page 26263 Discussion	1-2, 9, 11, 13, 28, 31- 33, 46, 54
X	Merida, I. et al "The serine -rich cytoplasmic domain of the interleukin-2 receptor β chain is essential for interleukin-2-dependent tyrosine protein kinase and phosphatidylinositol-3-kinase activation", The Journal of Biological Chemistry, 1993, vol 268 no 9 pages 6765-6770 See abstract, page 6769: second column paragraph 2	1-2, 11, 13- 15, 19, 28, 31, 46, 54
X	Paolini, R et al "Phosphorylation/dephosphorylation of high-affinity IgE receptors: a mechanism for coupling/uncoupling a large signalling complex", Proceedings of the National Academy of Science USA, 1992, vol 89 pages 10733-10737 See abstract, page 10733 first column	1-2, 9, 13- 15, 28-29, 31, 46
X	Imler, J-L et al, "Identification of three adjacent amino acids of interleukin-2 receptor β chain which control the affinity and the specificity of the interaction with interleukin-2", The EMBO Journal, 1992, vol 11 no 6 pages 2047-2053 See abstract, page 2048: first column paragraph 1, second column first paragraph, page 2050 second column paragraph 3	1, 11
X	Ferris, D K et al, "Interleukin 3 stimulation of tyrosine kinase activity in FDC-P1 cells", Biochemical and Biophysical Research Communications, 1988, vol 154 no 3 pages 991-996 See summary, page 992, pages 995-996	1-79

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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Gammeltoft, S et al Review Article "Protein kinase activity of the insulin receptor", The Biochemical Journal, 1986, vol 235 pages 1-11 See pages 5 and 9	1-2, 9, 11, 13-15, 28- 29, 31-33, 46, 54, 57-59

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.: 1-79 (all in part)
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
The binding motif of receptors is part of the known sequence of the receptors. The claims are to the discovery that a binding motif of a receptor that binds cytoplasmic proteins must contain a serine/threonine and tyrosine residue. This is not economically possible to search. The search has therefore been limited substantially to the examples.
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT
information on patent family members

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO 9621000		AU 34970/97	AU 47450/96	BR 9510499	
		CA 2208503	CA 2258515	CN 1175263	
		CZ 9701963	EP 0800536	EP 0967994	
		FI 972703	HU 78055	NO 972913	
		NZ 301916	PL 321088	US 5683892	
		US 5693323	US 5783184	US 5851525	
		US 6129913	US 2003059429	US 2004156850	
		WO 9748418	ZA 9510965	ZA 9705480	
AU 74992/00		EP 1218404	US 2002177166	WO 0119847	
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.					
END OF ANNEX					